

REMARKS/ARGUMENTS

Applicant has reviewed and considered the Office Action dated August 18, 2006 and the cited references therein. In response thereto, claims 1-4 are canceled without prejudice or disclaimer; and new claims 6-10 are added. Claim 5 was previously canceled. As a result, claims 6-10 are pending in the present application.

Specification Objection

The specification is objected to because of some informalities. Applicant respectfully submits that the exemplary parts of the specification do not contain the informalities as indicated by the Examiner. A copy of pages 2 and 3 of the specification are attached as reference. Thus, Applicant respectfully requests that the Examiner withdraw the objections.

Specification Objection

Claims 1-4 are objected to because of some informalities. New claims 6-10 are drafted to comply with the claim format.

Rejections Under 35 U.S.C. § 102 and 103

Claims 1-2 are rejected under 35 U.S.C. §102(b) as being clearly anticipated by Larsen et al. Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Larsen et al. in view of Stade et al. Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Larsen et al. in view of Murty.

Examiner asserts that Stade et al. has disclosed the use of a silencing board with a plurality of pores in an exhaust channel and the size of the pores is a matter of design choice, and thus original dependent claim 3 is unpatentable over Larsen et al. in view of Stade. Further, Examiner asserts that Murty has disclosed the use of a silencing board with a plurality of pores in an exhaust channel wherein the pores have a diameter less than 6 mm, and thus original dependent claim 4 is unpatentable over Larsen in view of Murty. Applicant respectfully traverses the rejections for at least the following reasons.

New claim 6 recites a silencer for a vacuum cleaner, comprising an exhaust channel for passage of an exhaust airflow from the vacuum cleaner; at least one silencing board mounted in the exhaust channel for passage of the exhaust airflow from the vacuum cleaner, the at least one silencing board having a plurality of pores distributed throughout the silencing board; and wherein a total passage area of the pores is less than half of a cross-sectional area of the exhaust channel.

Stade teaches that the number and size of pores in a silencing board is merely a matter of design and depends upon the capacity of the engine, the desired noise decrease, back pressure, etc. Namely, it is Stade's point that the selection of the number and size of the pores in the silencing board is NOT a key in designing a silencer. Stade's viewpoint is distinct from the concept of the present invention. Based on the research and test made by the inventor of the present application, it was found that if the total passage area of the pores of the silencing board was set to be greater than half of the cross-sectional area of the exhaust channel of the silencer in which the silencing board is mounted, the noise-reducing performance of the silencer would be deteriorated abruptly. Thus, the inventor of the present application found or determined an important point, if not critical point, of the total passage area of the silencing board pores (recited in original dependent claim 3), thereby resulting in many advantages including those described in the summary of the invention. Accordingly, Stade not only does not disclose or teach the claimed features, but also teaches away from the present invention.

Furthermore, Applicant respectfully submits that the total passage area of pores of a silencing board is generally determined by two variables: the size of an individual pore and the number of the pores. For a given total passage area, there are countless combinations of the two variables; however, if one of the variables is determined, the other will become fixed accordingly. To this end, the inventor of the present application made further developments to optimize the selectable variables, and then determined optimized pore diameters (e.g. < 6 mm, as recited in original dependent claim 4, now in claim 8), thereby improving the noise-reducing performance of the silencer. Thus, Applicant respectfully submits that such improvement in optimizing performance is not simply a design choice and is not obvious to a person skilled in the art.

In addition, Stade merely discloses a silencer for an engine, and Murty merely discloses a silencer for an air conditioner. They pertain to different technical fields from Larsen as well as

the present invention. With different applications and sophisticated technical nature of the applications as described above, it would not be obvious to a person skilled in the art to make such combination. Further, there is no teaching or suggestion in any of the cited references that such combination would result in the features and advantages as described in the present invention.

Therefore, Applicant respectfully submits that claim 6 patentably distinguishes over the cited references. Claims 7-8 which are dependent from claim 6 are also patentable for at least the same reason above.

In addition to the features discussed above, claim 9 further recites first and second silencing boards each having a plurality of round pores. To the contrary, in the silencing board 9 of Larsen, the passages 17 have an elongated rectangular cross-section (see figure 4). The rectangular cross-section of the passage makes it difficult to evenly distribute the passages throughout the silencing board, thereby deteriorating the noise-reducing capability of the silencing board. Thus, Applicant respectfully submits that claim 9 and its dependent claim 10 patentably distinguish over the cited references.

Double Patenting Rejection

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,932,188. Applicant respectfully submits that new claims 6-10 overcome the judicially created doctrine of obviousness-type double patenting.

Conclusion

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Reconsideration of the present application and a favorable response are respectfully requested.

If a telephone conference would be helpful in resolving any remaining issues, please contact the undersigned at (612) 752-7367.

Respectfully submitted,

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